
Bauhinia wuzhengyui (Leguminosae, Caesalpinioideae), a New Chinese Species

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ABSTRACT. *Bauhinia wuzhengyui*, a new species from Yunnan, China, is described and illustrated. Its relationship within the section *Loxocalyx* is discussed. The section *Loxocalyx* Benth, containing the new species, is reinstated based on re-assessment of the obliquely campanulate hypanthium and free gynophore.

During a visit to the Chinese Kunming Institute of Botany in May 1997, the author, who has been invited to act as co-author of *Bauhinia* for *Flora of China*, went through the herbarium of the genus. Here a specimen of an undescribed species was discovered. This sheet had been annotated (in 1959) by the eminent Chinese botanist Wu Zhengyi as *Bauhinia cinnamomifolia* sp. nov. This name, however, has been ascribed to section *Cinnamomifolia* under *Phanera*, a group to which this species clearly does not belong. From discussions with Prof. Wu it was evident that he had no plans to describe this species. It is therefore a great pleasure to dedicate this new species to him.

Bauhinia wuzhengyui S. S. Larsen, sp. nov. TYPE: China. Yunnan: Malipo County, Tian Bas, in thin forest on mountain slope, 480 m, 27 July 1958, Hu Yue Ying & Wen Shao Kong 580812 (holotype, KUN). Figure 1.

Bauhinia wuzhengyui species nova sectionis *Loxocalycis*, *Bauhinae wallichii* MacBride affinis a qua differt foliis integris, stigmatibus subsessile.

Liana, tendrils not seen. Flowering branches terete, glabrous. Leaf lamina entire, elliptic, 9.0–10.3 × 4.8–5.3 cm, glabrous both sides, base attenuate, apex abruptly acuminate; nerves 3; stipules not seen; petiole 2.3–3 cm long, thickened at both ends. Inflorescence terminal, an elongated raceme, with 2 racemes evident on type, one with a reduced leaf at base. Inflorescence axis up to 19 cm long, finely grayish pubescent; bracts 4–5 mm long, setaceous, finely pubescent outside; bracteoles similar but minute, 0.5 mm long, subopposite, inserted below the middle of the pedicel; pedicel 2.5–3 cm long, finely grayish pubescent. Flower buds ellip-

soid, 9–10 × 5–6 mm, finely grayish pubescent; hypanthium obliquely campanulate, enlarged adaxially, ca. 4 mm, twice the length of abaxial portion (Fig. 2A, B), apically pubescent except middle part of adaxial margin (Fig. 2F). Calyx 3–4 mm long, campanulate (occasionally slightly bilabiate, Fig. 2B), open in bud, split in upper half to 5 lobes, each with acute apex, finely grayish pubescent outside, inside glabrous to sparsely pubescent. Corolla with 5 subequal petals, 4 lateral ones spathulate, 7–10 mm long including a 2–3-mm claw, densely brownish pubescent on both sides, becoming glabrous toward claw; posterior petal ± obovate-oblong, carinate, basally fleshy, ca. 2 mm, with claw indistinct, upper portion, ca. 5 mm, finally reflexed, inside glabrous, outside pubescent in upper portion, marginally and basally glabrous. Fertile stamens 3; filaments ca. 10 mm long, glabrous; anthers 1.5–2 mm long, glabrous, dehiscing longitudinally; staminodes 5–7, 3 posterior forming a 3-dentate connate structure, 1.5 mm long (Fig. 2F); middle connate staminode slightly larger, inflated at base to a low rim, the 2 lateral teeth inserted behind the rim; 1–2 minute staminodes at both sides of the teeth and 1–2 minute staminodes between the fertile stamens. Pistil with thick stipe, free, 2–3 mm long, brownish woolly pubescent, inserted at lower abaxial side of hypanthium (Fig. 2F); ovary ca. 9 mm long, brownish woolly pubescent throughout, stigma subsessile, ± punctate, style glabrous, very short, ca. 1 mm. Ovules ca. 8. Pods not seen.

Distribution and habitat. Only known from the type locality.

DISCUSSION

Bauhinia wuzhengyui is here described based on a single collection in KUN, as the author was unable to locate any iso- or paratypes (see Note 1). After my experience of revising the genus *Bauhinia* for *Flora Malesiana* and the Indochinese floras, this new species is, however, so striking in both flower

雲南省中醫院研究室

採集號數 580812
 採集人 胡月英 文紹康 1958年 7 月 29 日
 產地 麻栗坡天竺 海拔高 480 米
 環境 山腰疏林
 性狀
 高度 物高直徑
 樹皮
 葉 有光澤
 花 總狀花序
 果
 藥用部份
 用途
 土名 科名
 學名
 附記

Field no. 580812
 Collector: Hu Yue Ying + Wen Shao Kong
 Date: 27 July, 1958
 Locality: Tian Bu, Mulipo Xian Yunnan
 Habitat: In thin forest on mountain slope, alt. 480 m
 Leaves: Shining
 Flower: Infl. racemose.

胡月英
 Hu Yue Ying



DEPT OF SYST. BOT., UNIV. OF AARHUS, HERBARIUM AAU

Holotype
Bauhinia wuzhengyii S. S. Larsen
 Det. Supee Saksuwan Larsen, 1998
 Dept of Syst. Bot., Univ. of Aarhus (Herbarium AAU)

模式標本
 TYPUS

Sect. Phanera Lour.
Bauhinia cinnamomifolia
 C. G. Lee, sp. nov.
 Typus!

Determinavit: 吳紅雲, II, 1959.

Figure 1. *Bauhinia wuzhengyii* S. S. Larsen; holotype specimen, Hu Yue Ying & Wen Shao Kong 580812 (KUN).

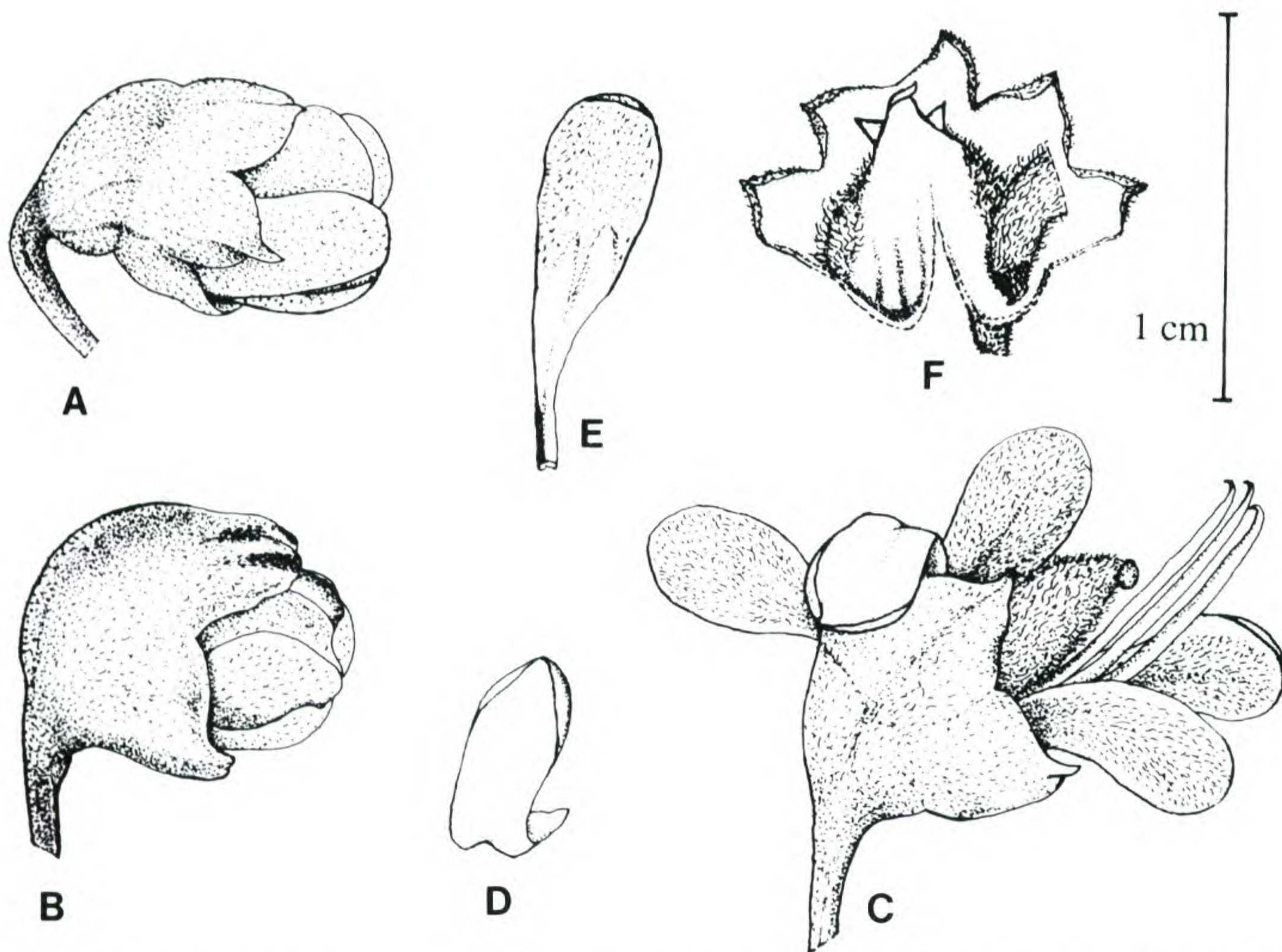


Figure 2. *Bauhinia wuzhengyii*. —A. Floral bud, lateral view, showing typical campanulate calyx. —B. Floral bud, lateral view, showing occasional bilabiate condition. —C. Open flower (anthers missing). —D. Posterior petal, upper surface. —E. Lateral petal, upper surface. —F. Calyx and hypanthium seen from inside showing ovary and the dentate, staminodial body. Drawn from Hu Yue Ying & Wen Shao Kong 580812.

and leaf morphology that I am not in doubt that it deserves specific status.

Bauhinia wuzhengyii belongs to the section *Loxocalyx* Benth (Syn.: series *Loxocalyx* (Benth) Wunderlin, Larsen & Larsen, 1987) together with *B. wallichii* MacBride and *B. japonica* Maximowicz. These three species have a free gynophore (stipe) inserted at the lower or upper abaxial side of the hypanthium. The new species is easily distinguished from these two other species by having entire leaves with 3 nerves, a subsessile stigma, and a 3-dentate, staminodial structure. *Bauhinia japonica* has bilobed leaves ($\frac{1}{3}$ – $\frac{2}{3}$ of the length), while *B. wallichii* has leaves emarginate to bilobed ($\frac{1}{3}$ of the length); both species have 9–13-nerved leaves, distinct style, and a 5-digitate staminodial structure. *Bauhinia japonica* is a coastal species distributed from Japan to Hainan, extending to a single locality along the coast of Kwangtung (Larsen & Larsen, 1982). *Bauhinia wallichii* is distributed from India (Silhet, Assam) to Myanmar and northern Vietnam (Larsen et al., 1980). *Bauhinia wallichii* was recently reported from southeastern Yun-

nan by Zhang and Chen (1996) and from northern Thailand (S. S. Larsen, in press).

The tri-nerved leaves with entire margins of *Bauhinia wuzhengyii* are similar to those in section *Tubicalyx* Wunderlin, Larsen & Larsen (1987). Despite superficial similarities between floral structures, the *Tubicalyx* group is distinguished by hypanthia not being oblique, gynophores adnate to the hypanthium wall, and all the staminodes being free and not connate as a compound structure.

The pollen grains of *Bauhinia wuzhengyii* are 3-colporate (Fig. 3A) with rugulose tectum (Fig. 3B, C). Pollen of this new species belongs to the *curtisii* pollen type, grouping together with *B. japonica* (S. S. Larsen, 1975) and *B. wallichii* (S. S. Larsen, in press).

In conclusion, the morphology and palynology point to this species being related to *Bauhinia wallichii* and *B. japonica*. It must, however, be emphasized that very little pollen has been available for SEM studies. Further studies, including sectioning of pollen, are highly needed for a comparison with other members of the *curtisii* pollen type.

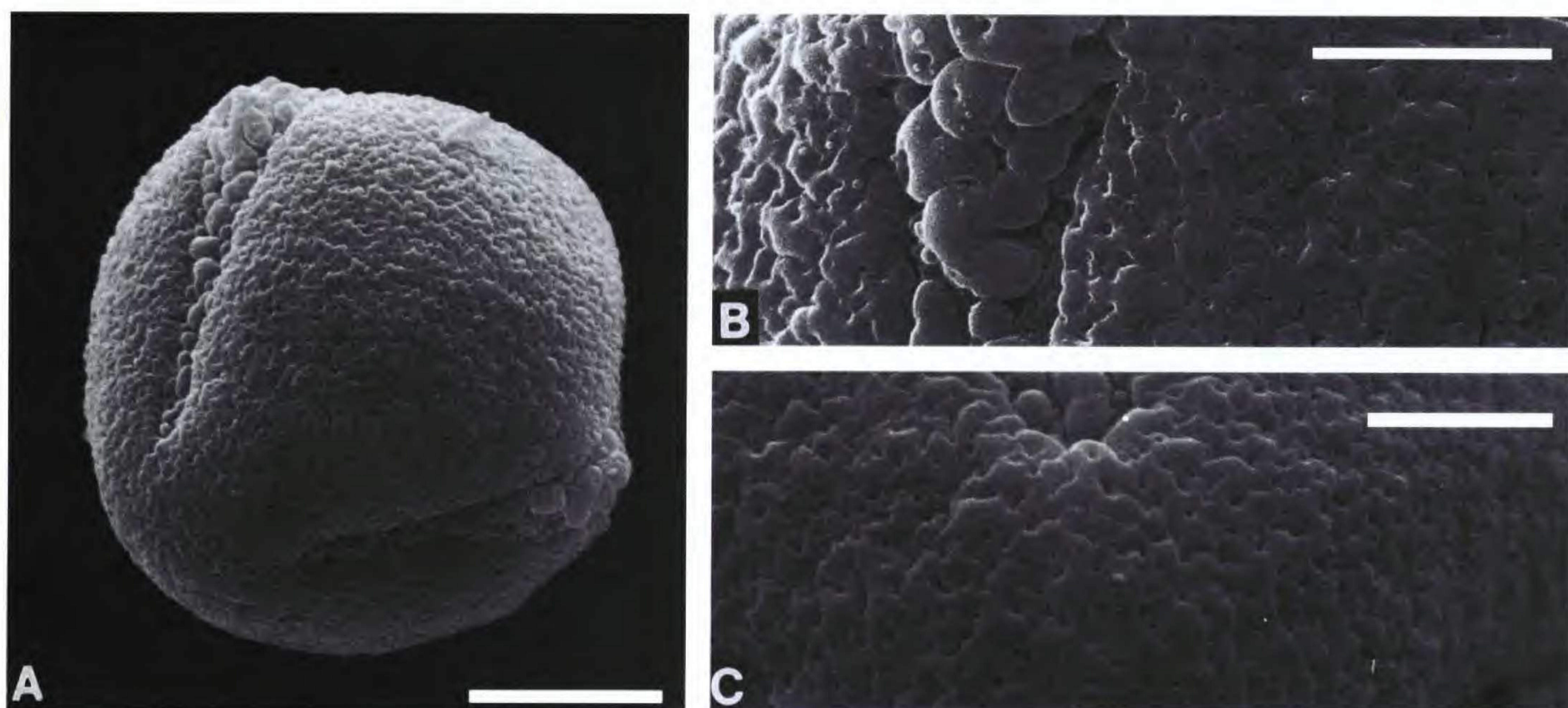


Figure 3. *Bauhinia wuzhengyii*. SEM micrographs of non-acetolyzed pollen. —A. Whole pollen grain, oblique view. —B, C. Detail of tectum at mesocolpia and apocolpia. Scale bar for A = 10 μ m; scale bar for B and C = 5 μ m.

Note 1. Zhang (1993) reported a *Bauhinia strychnoidea* Craib from Yunnan, probably referring to *B. strychnifolia* Craib, as *B. strychnoidea* Prain is a Malaysian species. This record is based on the same collecting number as the type of *B. wuzhengyii*. Dr. Zhang (pers. comm.) has seen material either in Kunming (KUN) or in Xishuangbanna (HITCB), but his determination does not appear on the holotype specimen.

Note 2. Since the work by Wunderlin et al. (1987), knowledge on the variation and structure of floral characters in *Bauhinia* has considerably increased. Consequently, the section *Loxocalyx* Benth (1865) is reinstated under *Bauhinia* subg. *Phanera*. This was earlier referred to as series *Loxocalyx* Wunderlin, Larsen & Larsen (1987); Zhang (1996) raised series *Loxocalyx* to a subsection, transferring it to section *Lasiobema*, but in this we cannot follow him for the diagnostic reasons listed below.

Bauhinia [subg. *Phanera*] section ***Loxocalyx***
Benth (1865), emended description:

Differs from other sections of subgenus *Phanera* by the campanulate, 5-dentate calyx open in bud; the hypanthium being obliquely campanulate, with the adaxial side twice as long as the abaxial and with the posterior staminode forming a dentate or digitate, fleshy structure; the gynophore (stipe) free, inserted on the lower or upper abaxial side of the hypanthium, and the stigma \pm punctiform.

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